Hydrology and Water Quality
Chapter 3.9

SUMMARY OF FINDINGS

The proposed Project will result in less than significant impacts related to Hydrology and Water Quality with mitigation. A detailed review of potential impacts is provided in the analysis below. A list of all mitigation measures is provided in Chapter 8.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

This section of the Draft Environmental Impact Report (DEIR) addresses potential impacts to Hydrology and Water Quality. As required in Section 15126, all phases of the proposed Project will be considered as part of the potential environmental impact.

As noted in Section 15126.2 (a), "[a]n EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision will have the effect of attracting people to the location and exposing them to the hazards found there. Similarly, the EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas."[1]

The environmental setting provides a description of the Hydrology and Water Quality in the County. The regulatory setting provides a description of applicable Federal, State and Local regulatory policies that were developed in part from information contained in the Tulare County 2030 General Plan, the Tulare County General Plan Background Report and/or the

[1] 2012 CEQA Guidelines, Section 15126.2 (a)

Tulare County General Plan Revised DEIR incorporated by reference and summarized below. Additional documents utilized are noted as appropriate. A description of the potential impacts of the proposed Project is provided and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or lessen the impacts.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA checklist item questions. The following are potential thresholds for significance.

- Project not in compliance with the regulations outlined by the State Water Resources Control Board.
- Project not in compliance with the regulations by the Regional Water Quality Control Board.
- Design of stormwater facilities will not adequately protect surface water quality
- Project will cause erosion.
- Project will alter watercourse and increase flooding impacts.
- Project's water usage not assessed in the Tulare County 2030 General Plan (General Plan Amendment, Zone Change, etc.)
- Project that will impact service levels of a Water Services District
- Project includes or requires an expansion of a Water Service District
- Project in flood zone
- Project will create a flood safety hazard
- Project located immediately downstream of a dam

ENVIRONMENTAL SETTING

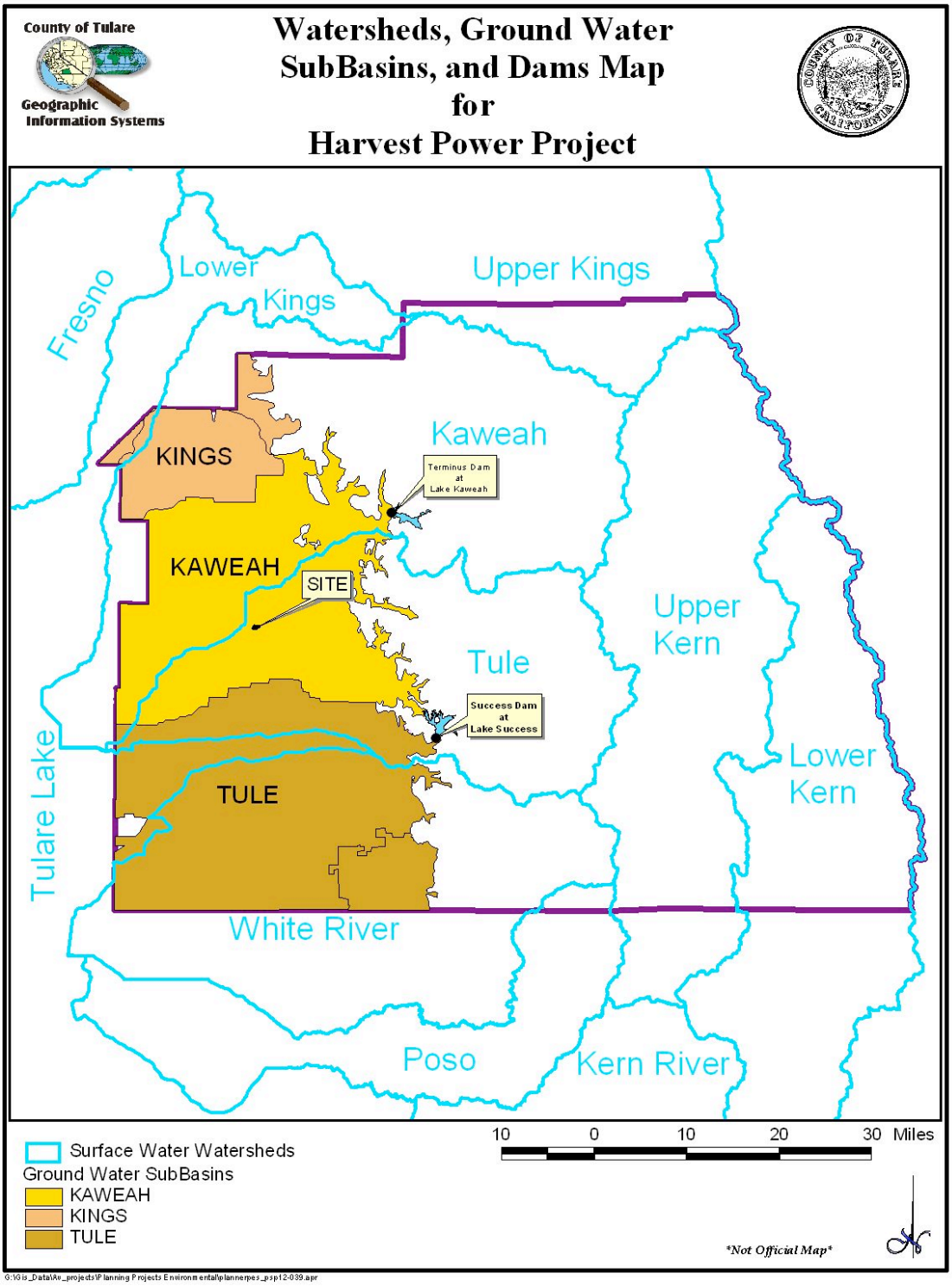
"The Tulare Lake Hydrologic Region covers approximately 10.9 million acres (17,050 square miles) and includes all of Kings and Tulare counties and most of Fresno and Kern counties... The southern portion of the San Joaquin Valley is subdivided into two separate basins, the San Joaquin and the Tulare, by a rise in the valley floor resulting from an accumulation of alluvium between the San Joaquin River and the Kings River fan. The valley floor in this region had been a complex series of interconnecting natural sloughs, canals, and marshes."[2]

> *"The Basin is one of the most important agricultural centers of the world. Industries related to agriculture, such as food processing and packaging (including canning, drying, and wine making), are prominent throughout the area. Producing and refining petroleum lead non-agricultural industries in economic importance."*[3]

The Tulare Lake Hydrologic Region has both watershed areas (surface water) and groundwater sub basin areas. See **Figure 3.9-1** below.

[2] California Water Plan Update 2009, Tulare Lake, page TL-5
[3] Water Quality Control Plan for the Tulare Lake Basin, page I-1

Figure 3.9-1
Watershed Map



Watershed (Surface Water)

"The Tulare Lake region is divided into several main hydrologic subareas: the alluvial fans from the Sierra foothills and the basin subarea (in the vicinity of the Kings, Kaweah, and Tule rivers and their distributaries); the Tulare Lake bed; and the southwestern uplands. The alluvial fan/basin subarea is characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey surface water originating from the Sierra Nevada. The dominant hydrologic features in the alluvial fan/basin subarea are the Kings, Kaweah, Tule, and Kern rivers and their major distributaries."[4]

"Surface water from the Tulare Lake Basin only drains north into the San Joaquin River in years of extreme rainfall. This essentially closed basin is situated in the topographic horseshoe formed by the Diablo and Temblor Ranges on the west, by the San Emigdio and Tehachapi Mountains on the south, and by the Sierra Nevada Mountains on the east and southeast."[5]

Surface Water Quality

"Surface water quality in the Basin is generally good, with excellent quality exhibited by most eastside streams. The Regional Water Board intends to maintain this quality."[6] Specific objectives outlined in the Water Quality Control Plan are listed below: [7]

- **Ammonia:** Waters shall not contain un-ionized ammonia in amounts which adversely affect beneficial uses. In no case shall the discharge of wastes cause concentrations of un-ionized ammonia (NH3) to exceed 0.025 mg/l (as N) in receiving waters.
- **Bacteria:** In waters designated REC-1, the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.
- **Biostimulatory Substances:** Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
- **Chemical Constituents:** Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
- **Color:** Waters shall be free of discoloration that causes nuisance or adversely affects beneficial uses.
- **Dissolved Oxygen:** Waste discharges shall not cause the monthly median dissolved oxygen concentrations (DO) in the main water mass (at centroid of flow) of streams and above the thermocline in lakes to fall below 85 percent of saturation concentration, and the 95 percentile concentration to fall below 75 percent of saturation concentration.
- **Floating Material:** Waters shall not contain floating material, including but not limited to solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
- **Oil and Grease:** Waters shall not contain oils, greases, waxes, or other materials in

[4] California Water Plan Update 2009, Tulare Lake, page TL-8
[5] Water Quality Control Plan for the Tulare Lake Basin, page I-1
[6] Ibid., page III-3
[7] Ibid., pages III-2 to III-7

concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

- **pH:** The pH of water shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.
- **Pesticides:** Waters shall not contain pesticides in concentrations that adversely affect beneficial uses.
- **Radioactivity:** Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life
- **Salinity:** Waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use of the water resources.
- **Sediment:** The suspended sediment load and suspended sediment discharge rate of waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
- **Settleable Material:** Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
- **Tastes and Odors:** Waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.
- **Temperature:** Natural temperatures of waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.
- **Toxicity:** All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life…
- **Turbidity:** Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

Surface Water Supply

"Surface water supplies for the Tulare Lake Basin include developed supplies from the [Central Valley Project] CVP, the [State Water Project] SWP, rivers, and local projects. Surface water also includes the supplies for required environmental flows. Required environmental flows are comprised of undeveloped supplies designated for wild and scenic rivers, supplies used for instream flow requirements, and supplies used for Bay-Delta water quality and outflow requirements. Finally, surface water includes supplies available for reapplication downstream. Urban wastewater discharges and agricultural return flows, if beneficially used downstream, are examples of reapplied surface water."[8]

"Along the eastern edge of the valley, the Friant-Kern Canal is used to divert San Joaquin River water from Millerton Lake for delivery to agencies extending into Kern County. All of the Tulare Lake region's streams are diverted for irrigation or other purposes, except in the wettest years.

[8] General Plan Background Report, page 10-7

Historically, they drained into Tulare Lake, Kern Lake, or adjacent Buena Vista Lake. The latter ultimately drained to Tulare Lake, which is about 30 feet lower in elevation."[9]
"The Kings, Kaweah, Tule, and Kern Rivers, which drain the west face of the Sierra Nevada Mountains, are of excellent quality and provide the bulk of the surface water supply native to the Basin. Imported surface supplies, which are also of good quality, enter the Basin through the San Luis Canal/California Aqueduct System, Friant-Kern Canal, and the Delta- Mendota Canal. Adequate control to protect the quality of these resources is essential, as imported surface water supplies contribute nearly half the increase of salts occurring within the Basin."[10]

Ground Water Sub Basin

"The Tulare Lake Hydrologic Region has 12 distinct groundwater basins and seven subbasins of the San Joaquin Valley Groundwater Basin, which crosses north into the San Joaquin River Hydrologic Region.... These basins underlie approximately 5.33 million acres (8,330 square miles) or 49 percent of the entire hydrologic region. Groundwater has historically been important to both urban and agricultural uses, accounting for 41 percent of the region's total annual supply and 35 percent of all groundwater use in the state. Groundwater use in the region represents about 10 percent of the state's overall water supply for agricultural and urban uses."[11]

"Water agencies in the Tulare Lake region have been practicing conjunctive use for many years to manage groundwater and assist dry year supplies. Groundwater recharge is primarily from rivers and natural streambeds, irrigation water percolating below the root zone of irrigated fields, direct recharge from developed ponding basins and water banks, and in-lieu recharge where surface water is made available in-lieu of groundwater pumping. Some water agencies accomplish recharge by directing available water into existing natural streambeds and sloughs, and others encourage application of water, when available, on farmed fields. The Deer Creek and Tule River Authority provides an example of how groundwater management activities can be coordinated with other resources. The authority, in conjunction with the US Bureau of Reclamation, has constructed more than 200 acres of recharge basins as part of its Deer Creek Recharge-Wildlife Enhancement Project. When available, the project takes surplus water during winter months and delivers it to the basins, which serve as winter habitat for migrating waterfowl, creating a significant environmental benefit. Most of the water also recharges into the underlying aquifer, thereby benefiting the local groundwater system."[12]

<u>Groundwater Quality</u>

Specific objectives outlined in the Water Quality Control Plan are listed below: [13]

- **Bacteria:** In ground waters designated MUN, the concentration of total coliform organisms over any 7-day period shall be less than 2.2/100 ml.
- **Chemical Constituents:** Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.

[9] California Water Plan Update 2009, Tulare Lake, page TL-5
[10] Water Quality Control Plan for the Tulare Lake Basin, page I-1
[11] California Water Plan Update 2009, Tulare Lake, page TL-9 to TL-10
[12] Ibid., page TL-10
[13] Water Quality Control Plan for the Tulare Lake Basin, page III-7 to III-8

- **Pesticides:** No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses.
- **Radioactivity:** Radionuclides shall not be present in ground waters in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.
- **Salinity:** All ground waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use and management of water resources.
- **Tastes and Odors:** Ground waters shall not contain taste- or odorproducing substances in concentrations that cause nuisance or adversely affect beneficial uses.
- **Toxicity:** Ground waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s).

According to the California Water Plan, the key ground water quality issues include the following.[14]

> **Salinity:** Salinity is the primary contaminant affecting water quality and habitat in the Tulare Lake region. Because the groundwater basin in the San Joaquin Valley portion of the region is an internally drained and closed basin, salts, much of which are introduced into the basin with imported water supplies, build up in the soil and groundwater. Salt contained in the imported water supply is the primary source of salt circulating in the Tulare Lake region. The California Aqueduct, Friant-Kern Canal, and to a less extent Delta Mendota Canal supply most of the higher quality surface irrigation water in the Tulare Lake region. The quality of this supply may be impaired by the recirculation of salts from the San Joaquin River to the Delta Mendota Canal intake pump, leading to a greater net accumulation of salts in the basin. Delivery data from the two major water projects in California indicate there is a substantial amount of salt being transported from the Delta to other basins throughout the state. Annual import of salt into the Tulare Lake region is estimated to be 1,206 thousand tons of salt. In situ dissolution of salts and pumping from the underlying confined aquifer are important secondary sources.
>
> **Sedimentation and Erosion:** In the Central Valley, erosion is occurring from the headwaters down to the valley floor. Although naturally occurring, erosion can be accelerated by timber harvest activities, land use conversion, rural development, and grazing. Excessive soil erosion and sediment delivery can impact the beneficial uses of water by (1) silting over fish spawning habitats; (2) clogging drinking water intakes; (3) filling in pools creating shallower, wider, and warmer streams and increasing downstream flooding; (4) creating unstable stream channels; and (5) losing riparian habitat. Timber harvesting in the riparian zone can adversely affect stream temperatures by removing stream shading, a concern for spawning and rearing habitat for salmonids. Thousands of miles of streams are potentially impacted, and the lack of resources has prevented a systematic evaluation of these impacts.

[14] California Water Plan Update 2009, Tulare Lake, page TL-22 to TL-24

Nitrates and Groundwater Contaminates: Groundwater is a primary water supply, but in many places it is impaired or threatened because of elevated levels of nitrates and salts that are derived principally from irrigated agriculture, dairies, discharges of wastewater to land, and from disposal of sewage from both community wastewater systems and septic tanks. As population has grown, many cities have struggled to fund improvements in wastewater systems. High TDS content of west-side water is due to recharge of streamflow originating from marine sediments in the Coast Range.

Naturally occurring arsenic and human-made organic chemicals—pesticides and industrial chemicals—in some instances have contaminated groundwater that is used as domestic water supplies in this region. In some cases, nitrates are from natural sources. Agricultural pesticides and herbicides have been detected throughout the valley, but primarily along the east side where soil permeability is higher and depth to groundwater is shallower. The most notable agricultural contaminant is DBCP, a now-banned soil fumigant and known carcinogen once used extensively on grapes.

Groundwater Supply

"Surface water supplies tributary to or imported for use within the Basin are inadequate to support the present level of agricultural and other development. Therefore, ground water resources within the valley are being mined to provide additional water to supply demands."[15]

"Tulare Lake region's groundwater use rises and falls contingent on the availability of both local and imported surface supplies. The management of water resources within this region is a complex activity and critical to the region's agricultural operations. Local annual surface supplies are determined by the amount of runoff from the Sierra Nevada watersheds, the flows captured in local reservoirs, and carryover storage over a series of years. Imported surface supply availability is contingent not only on runoff in any year or series of years but also by regulations determining the amount of water that can be pumped month to month from the Sacramento-San Joaquin River Delta due to fishery and other concerns. The recent San Joaquin River settlement will reduce the overall volume of water available for diversion into the Friant-Kern Canal. The new biological opinion on the Operating Criteria and Plan (OCAP) for the SWP and CVP will impact surface water supplies to south-of-Delta water users."[16]

"Groundwater in Tulare County occurs in an unconfined state throughout, and in a confined state beneath its western portion. Extensive alluvial fans associated with the Kings, Kaweah, and Tule Rivers provide highly permeable areas in which groundwater in the unconfined aquifer system is readily replenished. Interfan areas between the streams contain less permeable surface soils and subsurface deposits, impeding groundwater recharge and causing well yields to be relatively low. The mineral quality of groundwater in Tulare County is generally satisfactory for all uses."[17] "Groundwater recharge is primarily from natural streams, other water added to streambeds, from deep percolation of applied irrigation water, and from impoundment of surface water in developed water bank/percolation ponds."[18]

[15] Water Quality Control Plan for the Tulare Lake Basin, page I-1
[16] California Water Plan Update 2009, Tulare Lake, page TL-15 to TL-17
[17] General Plan Background Report, page 10-11
[18] California Water Plan Update 2009, Tulare Lake, page TL-17

"The Tulare Lake region has experienced water-short conditions for more than 100 years, which has resulted in a water industry that has consciously developed—through careful planning, management and facility design—the possibility of a shortage occurring in any year. Water demand is more or less controlled by available, reliable long-term water supplies. Over the years, agricultural acreage has risen and dropped largely based on water supplies. The region initially developed with surface water supplies; but local water users learned these supplies could widely vary in volume from year to year and drought conditions could quickly develop. The introduction of deep well turbines resulted in a dramatic rise in groundwater use in the early 1900s, subsequently resulting in dropping groundwater levels and land subsidence. Surface water storage and conveyance systems built to alleviate the overuse of groundwater provided an impounded supply of water that could be used during years with deficient surface water. This resulted in a regional reliance on conjunctive water use in the development of the local water economy. Efforts to address Delta environmental issues and the subsequent loss of surface water to the region is increasing groundwater use and creating concern that additional pumping will increase subsidence."[19]

According to the 2009 California Water Plan, the water storage has varied between the 1998-2005. It seems that most of the variation has occurred from changing precipitation levels. See **Table 3.9-1** and **Figure 3.9-2** below.

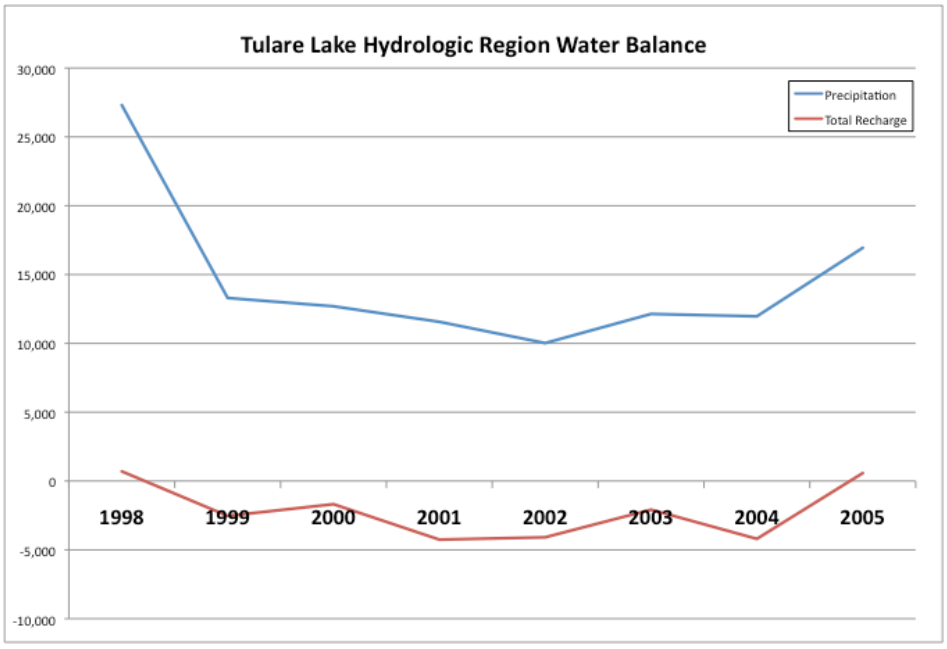
Table 3.9-1
Tulare Lake Hydrologic water balance for 1998-2005 (thousand acre-feet)

Tulare Lake Region	Water Year							
	1998	1999	2000	2001	2002	2003	2004	2005
Water Entering the Region								
Precipitation	27,306	13,298	12,693	11,564	10,021	12,137	11,964	16,939
Inflow from Oregon/Mexico	0	0	0	0	0	0	0	0
Inflow from Colorado River	0	0	0	0	0	0	0	0
Imports from Other Regions	3,716	4,817	5,627	3,696	4,239	5,174	4,816	5,909
Total	**31,022**	**18,115**	**18,320**	**15,260**	**14,260**	**17,311**	**16,780**	**22,848**
Water Leaving the Region								
Consumptive Use of Applied Water	5,401	7,486	7,427	7,591	7,938	7,430	8,031	6,655
Outflow to Oregon/Nevado/Mexico	0	0	0	0	0	0	0	0
Exports to Other Regions	1,857	821	1,540	1,093	1,643	1,898	1,961	1,724
Statutory Required Outflow to Salt Sink	0	0	0	0	0	0	0	0
Additional Outflow to Salt Sink	457	456	457	458	305	458	457	300
Evaporation, Evapotranspiration of Native Vegetation, Groundwater Subsurface Outflows, Natural and Incidental Runoff, Ag Effective Precipitation & Other Outflows	22,606	11,885	10,578	10,374	8,462	10,327	10,532	13,596
Total	**30,321**	**20,648**	**20,002**	**19,516**	**18,348**	**20,113**	**20,981**	**22,274**
Storage Changes in Region: [+] Water added to storage, [-] Water removed from storage								
Change in Surface Reservoir Storage	438	-595	-57	-141	-161	173	-199	680
Change in Groundwater Storage	263	-1,938	-1,625	-4,115	-3,927	-2,975	-4,002	-106
Total	**701**	**-2,533**	**-1,682**	**-4,256**	**-4,088**	**-2,802**	**-4,201**	**574**

Source: California Water Plan Update 2009, Tulare Lake, Department of Water Resources (This table does not include dairy usage)

[19] Ibid., page TL-19

Figure 3.9-2
Water Balance



Source: California Water Plan Update 2009, Tulare Lake, Department of Water Resources

"Groundwater overdraft is expected to decline statewide by 2020. The reduction in irrigated acreage in drainage problem areas on the west side of the San Joaquin Valley is expected to reduce groundwater demands in the Tulare Lake region by 2020."[20] According to the 2009 California Water Plan Update, it is anticipated that there will be a 550,000 acre-feet reduction in the water demand in the Tulare Lake Hydrologic Area under Current Growth trends. Slow & Strategic Growth may further decrease water demand, while Expansive Growth may increase water demand.

"There are 19 entities in Tulare County with active programs of groundwater management. These management programs include nearly all types of direct recharge of surface water. Groundwater recovery is accomplished primarily through privately owned wells. Among the larger programs of groundwater management are those administered by the Kaweah Delta Water Conservation District, the Kings River Water Conservation District, the Tulare Irrigation District, the Lower Tule Water Users Association, and the Alta Irrigation District, utilizing water from the Friant-Kern Canal and local streams. The Kings River Water Conservation District covers the western county."[21] See table of irrigation districts located in Tulare County below:

[20] General Plan Background Report, page 10-11
[21] Ibid., page 10-12

Table 3.9-2
Irrigation Districts in Tulare County

Entity	Surface Water	Imported Water Source	Groundwater Extraction
Alpaugh Irrigation District	NA	Friant-Kern Canal (1,000af average)	19,000 af
Alta Irrigation District	King River	Friant-Kern Canal (surplus)	230,000 af
Delano-Earlimart Irrigation District	NA	Friant-Kern Canal (146,050 af average)	8,000 af
Exeter Irrigation District	NA	Friant-Kern Canal (1,000 af average)	14,000 af
Hills Valley Irrigation District	NA	Cross Valley Canal (2,000 af average)	1,000 af
Ivanhoe Irrigation District	Kaweah River	Friant-Kern Canal (11,650 af average)	15,000 af
Kaweah Delta Water Cons. District	Kaweah River	Friant-Kern Canal (24,000 af average)	130,000 af
Kern-Tulare Water District	Kern River	Cross Valley Canal (41,000 af average)	33,000 af
Lindmore Irrigation District	NA	Friant-Kern Canal (44,000 af average)	28,000 af
Lower Tulare River Irrigation Dist.	Tule River	Friant-Kern Canal (180,200 af average) Cross Valley Canal (31,000 af average)	NA
Lindsay-Strathmore Irrigation District	NA	Friant-Kern Canal (24,150 af average)	NA
Orange Cove Irrigation District	NA	Friant-Kern Canal (39,200 af average)	30,000 af
Pioneer Water Irrigation District	Tule River		3,000 af
Pixley Irrigation District	NA	Friant-Kern Canal (1,700 af average) Cross Valley Canal (31,000 af average)	130,000 af
Porterville Irrigation District	Tule River	Friant-Kern Canal (31,000 af average)	15,000 af
Rag Gulch Water District	Kern River	Friant-Kern Canal (3,700 af average) Cross Valley Canal (13,300 af average)	
Saucelito Irrigation District	Tule River	Friant-Kern Canal (37,600 af average)	15,000 af
Stone Corral Irrigation District	NA	Friant-Kern Canal (10,000 af average)	5,000 af
Teapot Dome Irrigation District	NA	Friant-Kern Canal (5,600 af average)	
Terra Bella Irrigation District	NA	Friant-Kern Canal (29,000 af average)	2,000 af
Tulare Irrigation District	Kaweah River	Friant-Kern Canal (100,500 af average)	65,000 af

Source: Bookman-Edmonston Engineering Inc. Water Resources Management in the Southern San Joaquin Valley, Table A-1.

"The Tulare County Resource Management Agency maintains a list of special districts that provide sewer and/or water service that cannot currently meet the demand of new development projects. The list provided by Tulare County RMA (last updated April 30, 2007) indicates that following water and/or sewer districts are either under a temporary cease and desist order by the Regional Water Control Board prohibiting any new connections, or have other limitations for water and sewer connections.

- Alpaugh Joint Powers Authority Water District;
- Cutler Public Utility District;
- Delft Colony Zone of Benefit (County RMA);
- Earlimart Pubic Utility District;
- El Rancho Zone of Benefit (County RMA);
- Orosi Public Utility District;
- Pixley Public Utility District;
- Pratt Mutual Water Company;

- Richgrove Public Utility District;
- Seville Zone of Benefit (County RMA);
- Seville Water Company;
- Springville Public Utility District;
- Tooleville Zone of Benefit (County RMA);
- Traver Zone of Benefit (County RMA); and
- Wells Tract Zone of Benefit (County RMA)."[22]

Much of the County Land is rural in nature and requires the use of private wells. If a project utilizes water from an existing irrigation district, then it will be up to the irrigation district to determine if the proposed Project could potentially create a significant impact related to water supply. An example of a potential impact could involve a need for a significant increase in the service levels of an irrigation district.

Flooding

"Flooding is a natural occurrence in the Central Valley because it is a natural drainage basin for thousands of watershed acres of Sierra Nevada and Coast Range foothills and mountains. Two kinds of flooding can occur in the Central Valley: general rainfall floods occurring in the late fall and winter in the foothills and on the valley floor; and snowmelt floods occurring in the late spring and early summer. Most floods are produced by extended periods of precipitation during the winter months. Floods can also occur when large amounts of water (due to snowmelt) enter storage reservoirs, causing an increase in the amount of water that is released."[23]

"Flood events in the Tulare Lake region are caused by rainfall, snowmelt, and the resultant rising of normally dry lakes. Although significant progress has been made to contain floodwaters in the region, improvements to the flood control system are still needed to lessen the flood risk to life and property."[24]

"Official floodplain maps are maintained by the Federal Emergency Management Agency (FEMA). FEMA determines areas subject to flood hazards and designates these areas by relative risk of flooding on a map for each community, known as the Flood Insurance Rate Map (FIRM). A 100-year flood is considered for purposes of land use planning and protection of property and human safety. The boundaries of the 100-year floodplain are delineated by FEMA on the basis of hydrology, topography, and modeling of flow during predicted rainstorms."[25]

"The flood carrying capacity in rivers and streams has decreased as trees, vegetation, and structures (e.g., bridges, trestles, buildings) have increased along the Kaweah, Kings, and Tule Rivers. Unsecured and uprooted material can be carried down a river, clogging channels and piling up against trestles and bridge abutments that can, in turn, give way or collapse, increasing blockage and flooding potential. Flooding can force waters out of the river channel and above its ordinary floodplain. Confined floodplains can result in significantly higher water elevations and

[22] General Plan Background Report, page 7-33
[23] Ibid., page 8-13
[24] California Water Plan Update 2009, Tulare Lake, page TL-28 to TL-29
[25] Ibid., page 8-14

higher flow rates during high runoff and flood events."[26]

"Dam failure can result from numerous natural or human activities, such as earthquakes, erosion, improper siting, rapidly rising flood waters, and structural and design flaws. Flooding due to dam failure can cause loss of life, damage to property, and other ensuing hazards. Damage to electric-generating facilities and transmission lines associated with hydro-electric dams could also affect life support systems in communities outside the immediate hazard area."[27]

REGULATORY SETTING

Federal Agencies & Regulations

Clean Water Act/NPDES

"The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972… Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. We have also set water quality standards for all contaminants in surface waters… The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters."[28]

Safe Drinking Water Act

"The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards… SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. (SDWA does not regulate private wells which serve fewer than 25 individuals.)"[29]

[26] General Plan Background Report, page 8-14
[27] Ibid., page 8-17
[28] EPA summary of the Clean Water Act – http://www.epa.gov/lawsregs/laws/cwa.html
[29] EPA summary of the Safe Drinking Water Act – http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm

Environmental Protection Agency

The mission of EPA is to protect human health and the environment.
EPA's purpose is to ensure that:

- all Americans are protected from significant risks to human health and the environment where they live, learn and work;
- national efforts to reduce environmental risk are based on the best available scientific information;
- federal laws protecting human health and the environment are enforced fairly and effectively;
- environmental protection is an integral consideration in U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy;
- all parts of society -- communities, individuals, businesses, and state, local and tribal governments -- have access to accurate information sufficient to effectively participate in managing human health and environmental risks;
- environmental protection contributes to making our communities and ecosystems diverse, sustainable and economically productive; and
- the United States plays a leadership role in working with other nations to protect the global environment."[30]

Army Corps of Engineers

"The Department of the Army Regulatory Program is one of the oldest in the Federal Government. Initially it served a fairly simple, straightforward purpose: to protect and maintain the navigable capacity of the nation's waters. Time, changing public needs, evolving policy, case law, and new statutory mandates have changed the complexion of the program, adding to its breadth, complexity, and authority.

The Regulatory Program is committed to protecting the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands."[31]

National Flood Insurance Program

"In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding."[32]

[30] EPA Website, http://www.epa.gov/aboutepa/whatwedo.html
[31] Army Corps of Engineers http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx
[32] Flood Insurance Program Summary: http://www.floodsmart.gov/floodsmart/pages/about/nfip_overview.jsp

State Agencies & Regulations

The Porter-Cologne Water Quality Control Act

"Under the Porter-Cologne Water Quality Control Act (Porter-Cologne), the State Water Resources Control Board (State Board) has the ultimate authority over State water rights and water quality policy. However, Porter-Cologne also establishes nine Regional Water Quality Control Boards (Regional Boards) to oversee water quality on a day-to-day basis at the local/regional level."[33]

State Water Quality Control Board

"The State Water Resources Control Board (State Water Board) was created by the Legislature in 1967. The joint authority of water allocation and water quality protection enables the State Water Board to provide comprehensive protection for California's waters. The State Water Board consists of five full-time salaried members, each filling a different specialty position. Board members are appointed to four-year terms by the Governor and confirmed by the Senate."[34]

The State Water Board is in the process generating a Statewide Order for Composing Facilities. Current practice is to issue individual waste discharge requirements (WDRs) for larger composting facilities. A conditional waiver for "green waste-only" composting facilities was in effect from 1994 until 2003, when a change in law required all waivers to be either renewed or replaced with WDRs. Currently, the Water Boards are developing statewide general WDRs that will address water quality protection at composting facilities that currently exists or may be constructed. [35]

Under tentative order **Water Quality Order No. Dwq-2012-Xxxx**, composting has general waste water requirement, including monitoring and annual reporting to the RWQCB. This order is not final and will require compost sites to be designed to protect groundwater. The current composting facility is designed to protect ground, and surface, water by working with the Regional Water Quality Control board on compost pad compaction, retention pond design, maintenance of a site slope toward the pond, maintenance of a berm around the entire facility to prevent water from entering or leaving the site, and not allowing material to be tracked off site. The composting facility will comply with any new regulatory requirements related to the new General Order, and design the Anaerobic Digester according to water board requirements as well.

Regional Water Quality Control Board

"There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans

[33] Porter-Cologne Water Quality Control Act Summary, http://ceres.ca.gov/wetlands/permitting/Porter_summary.html
[34] State Water Board Website, http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.shtml
[35] State Water Resources Control Board Water Quality Order No. Dwq-2012-Xxxx

that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop "basin plans" for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality."[36]

"The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter-Cologne Water Quality Control Act."[37]

California Department of Water Resources[38]

This Department's primary mission is to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments. Other goals include:
Goal 1 - Develop and assess strategies for managing the State's water resources, including development of the California Water Plan Update.
Goal 2 - Plan, design, construct, operate, and maintain the State Water Project to achieve maximum flexibility, safety, and reliability.
Goal 3 - Protect and improve the water resources and dependent ecosystems of statewide significance, including the Sacramento-San Joaquin Bay-Delta Estuary.
Goal 4 - Protect lives and infrastructure as they relate to dams, floods, droughts, watersheds impacted by fire and disasters, and assist in other emergencies.
Goal 5 - Provide policy direction and legislative guidance on water and energy issues and educate the public on the importance, hazards, and efficient use of water.
Goal 6 - Support local planning and integrated regional water management through technical and financial assistance.
Goal 7 - Perform efficiently all statutory, legal, and fiduciary responsibilities regarding management of State long-term power contracts and servicing of power revenue bonds.
Goal 8 - Provide professional, cost-effective, and timely services in support of DWR's programs, consistent with governmental regulatory and policy requirements.

Local Policy & Regulations

Tulare County Environmental Health Services

"The Environmental Health Services Division regulates retail food sales and hazardous waste storage and disposal; inspects contaminated sites and monitors public water systems, which protects and reduces the degradation of groundwater. The Division regulates the production and shipping of milk for Tulare and Kings Counties and also serves as staff to the Tulare County

[36] State Water Board Website, http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.shtml
[37] Central Valley Water Quality Control Board, http://www.swrcb.ca.gov/centralvalley/about_us/
[38] California Department of Water Resources website, http://www.water.ca.gov/about/mission.cfm

Water Commission appointed by the Board of Supervisors. The goal of HHSA's Environmental Health division is to protect Tulare County's residents and visitors by ensuring that our environment is kept clean and healthy."[39] This division requires water quality testing of public water systems.

Any project that involves septic tanks and water wells within Tulare County is subject to approval by this agency. All recommendations provided by this division will be added as mitigation measures to ensure reduction of environmental impacts.

Tulare County General Plan Policies

The General Plan has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the proposed Project are listed below.

AG-1.17 Agricultural Water Resources
The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture.

HS-4.4 Contamination Prevention
The County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination.

HS-5.2 Development in Floodplain Zones
The County shall regulate development in the 100-year floodplain zones as designated on maps prepared by FEMA in accordance with the following:

1. Critical facilities (those facilities which should be open and accessible during emergencies) shall not be permitted.
2. Passive recreational activities (those requiring non-intensive development, such as hiking, horseback riding, picnicking) are permissible.
3. New development and divisions of land, especially residential subdivisions, shall be developed to minimize flood risk to structures, infrastructure, and ensure safe access and evacuation during flood conditions.

HS-5.4 Multi-Purpose Flood Control Measures
The County shall encourage multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of the County's streams, creeks, and lakes. Where appropriate, the County shall also encourage the use of flood and/or stormwater retention facilities for use as groundwater recharge facilities.

HS-5.9 Floodplain Development Restrictions
The County shall ensure that riparian areas and drainage areas within 100-year floodplains are free from development that may adversely impact floodway capacity or characteristics of natural/riparian areas or natural groundwater recharge areas.

[39] Tulare County Environmental Health Division, http://www.tularehhsa.org/index.cfm/public-health/environmental-health/

HS-5.11 Natural Design
The County shall encourage flood control designs that respect natural curves and vegetation of natural waterways while retaining dynamic flow and functional integrity.

WR-1.1 Groundwater Withdrawal
The County shall cooperate with water agencies and management agencies during land development processes to help promote an adequate, safe, and economically viable groundwater supply for existing and future development within the County. These actions shall be intended to help the County mitigate the potential impact on ground water resources identified during planning and approval processes.

WR-1.5 Expand Use of Reclaimed Wastewater
To augment groundwater supplies and to conserve potable water for domestic purposes, the County shall seek opportunities to expand groundwater recharge efforts

WR-1.6 Expand Use of Reclaimed Water
The County shall encourage the use of tertiary treated wastewater and household gray water for irrigation of agricultural lands, recreation and open space areas, and large landscaped areas as a means of reducing demand for groundwater resources.

WR-2.1 Protect Water Quality
All major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site.

WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement
The County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board.

WR-2.3 Best Management Practices (BMPs)
The County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board.

WR-2.4 Construction Site Sediment Control
The County shall continue to enforce provisions to control erosion and sediment from construction sites.

WR-2.5 Major Drainage Management
The County shall continue to promote protection of each individual drainage basin within the County based on the basins unique hydrologic and use characteristics.

WR-2.6 Degraded Water Resources
The County shall encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

WR-2.8 Point Source Control
The County shall work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the California Environmental Quality Act review and project approval process) and monitored to ensure long-term compliance.

WR-3.3 Adequate Water Availability
The County shall review new development proposals to ensure the intensity and timing of growth will be consistent with the availability of adequate water supplies. Projects must submit a Will-Serve letter as part of the application process, and provide evidence of adequate and sustainable water availability prior to approval of the tentative map or other urban development entitlement.

WR-3.5 Use of Native and Drought Tolerant Landscaping
The County shall encourage the use of low water consuming, drought-tolerant and native landscaping and emphasize the importance of utilizing water conserving techniques, such as night watering, mulching, and drip irrigation.

WR-3.6 Water Use Efficiency
The County shall support educational programs targeted at reducing water consumption and enhancing groundwater recharge.

WR-3.10 Diversion of Surface Water
Diversions of surface water or runoff from precipitation should be prevented where such diversions may cause a reduction in water available for groundwater recharge.

IMPACT EVALUATION

Will the project:

a) Violate any water quality standards or waste discharge requirements?

Project Impact Analysis: ***Less than Significant Impact with Mitigation***

Stormwater (Surface Water Quality)

The project site is located in the Kaweah River Watershed. The Kaweah River begins in Sequoia National Park, flows west and southwest, and is impounded by Terminus Dam. The project site is not located along a natural water feature such as a lake, river or stream. There is an adjacent irrigation ditch adjacent to the site, and there is one other water way proximity 1000 feet to the project site.

The existing surface water bodies in the area include the Tulare Colony Ditch and Bates Slough Ditch. All activities on this project will continue to need to comply with the setback and surface water quality practices already established in order to protect these water bodies.

Harvest Power will comply with the requirements of the Regional Water Quality Control Board for their detention basins and effluent holding facilities. This includes updating the facilities, when the general order No. Dwq-2012-Xxxx is finalized. It is anticipated that the current site design, combined with the protections included in the energy facility design will be sufficient to protect ground and surface water quality issues related to this facility. All internal runoff created by the facility operations and precipitation up to a 100-year, 24 hour storm is currently, and will continue to be, contained on site. (See **Figure 3.9-3**). The existing site has over 35 acres of pervious surfaces (including windrows, retention basins, and dirt roadways). It has also been compacted to comply with current operational parameters designed to protect groundwater. However, water flow and the porosity of the surface is constrained by the composted material in the windrows. This has been quantified and be accounted for in the proposed project's berm height and drainage facility design. Construction/Engineering documents will be provided during the building permit stage.

Water coming into contact with any feedstock or composting material will be prevented from leaving the site. The proposed retention pond is designed to collect water from the entire 35 acre site. (See **Figure 3.9-4** proposed drainage swale). This facility will require RWQCB approval for the drainage systems. The current berms and slopes will be modified, if needed, to ensure that current conditions are met.

The digester operation and CNG facilities will generate 3 acres of additional impervious surfaces (including the digester facilities and CNG/CHP tanks, concrete areas, compacted road base, the detention basin (aka drainage swale). With implementation of the proposed Project, the total impervious surface will be approximately 3 acres. The drainage basins for the project are designed for 100 year, 24 hour storm events and should be sufficient to prevent offsite discharge of storm water.

The proposed Project will maintain all storm water on site. Therefore, the stormwater will not include any discharges. However, the Central Valley Regional Water Quality Control Board (RWQCB) will be consulted and require the appropriate water quality permit for this project, if a RWD is required. A letter from the RWQCB to the County will be required for the project to begin receive building permits and begin construction.

The facility will continue to comply with any regulations or procedures required by the state or regional water quality control board. The drainage ponds will continue to be maintained to manage weed growth and prevent fly and mosquito breeding.

As described earlier in the document, all liquid digestate from the facility will either be applied directly to the compost piles, substituting for water that will have been needed for the composting process. It will also be incorporated into the composted material. In periods of heavy rain, this digestate will be stored either in a lined and covered lagoon, or storage tank and then applied to the compost piles during drier periods.

If storage tanks are chosen, they will be liquid-tight. In addition, they will be equipped with a leak detection system. A matt wicking material and a High Density Polyethylene (HDPE) liner with welded seams will be laid underneath the foundation, secured to the tank walls and connected to a visual monitoring well so that any leakage can be observed and contained. In the unlikely event of a leak, the inspection well also acts as an access to vacuum the leaking fluid and pump back into the tanks. This design has been implemented and approved by the Central Valley Regional Water Quality Control Board for similar anaerobic digester projects in the Central Valley.

The material receiving device consists of a fully containerized unit. The organic separator will be liquid tight, as well. As a precautionary measure, food waste or leaking material will be further contained by mounting the equipment on concrete foundations with elevated lip seals as to prevent any contamination from reaching the ground.

As part of the National Pollutant Discharge Eliminations System (NPDES), the applicant will be required to comply with the NPDES requirements. Currently, this is accomplished by the berm and pond design of the site, and not allowing water to enter or exit the site. If the new site design requires it, Harvest Power will prepare a Storm Water Pollution Prevention Plan (SWPPP) and Storm Water Monitoring Plan (SWMP). Within this SWPPP/SWMP, it is noted that the proposed Project will comply with the General Permit for Industrial Dischargers. As part of this compliance the applicant will 1) demonstrate compliance with permit requirements, 2) evaluate changing conditions and practices at the site to control pollutants in stormwater discharges, 3) implement the SWPPP, and 4) measure effectiveness of BMPs. In addition, the General Permit requires annual testing and reporting of results to the RWQCB.

Figure 3.9-3
Existing Retention and Drainage Plan

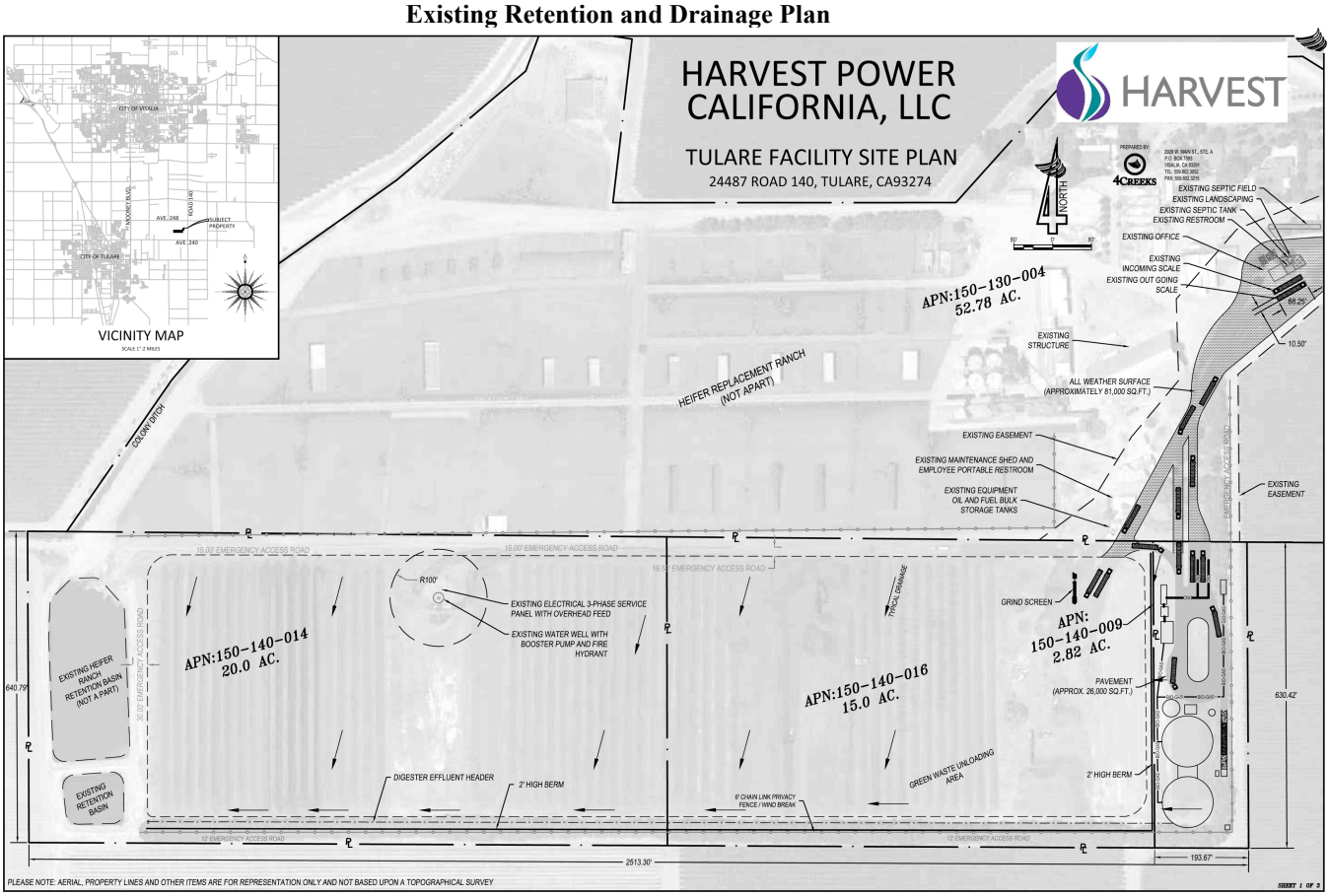
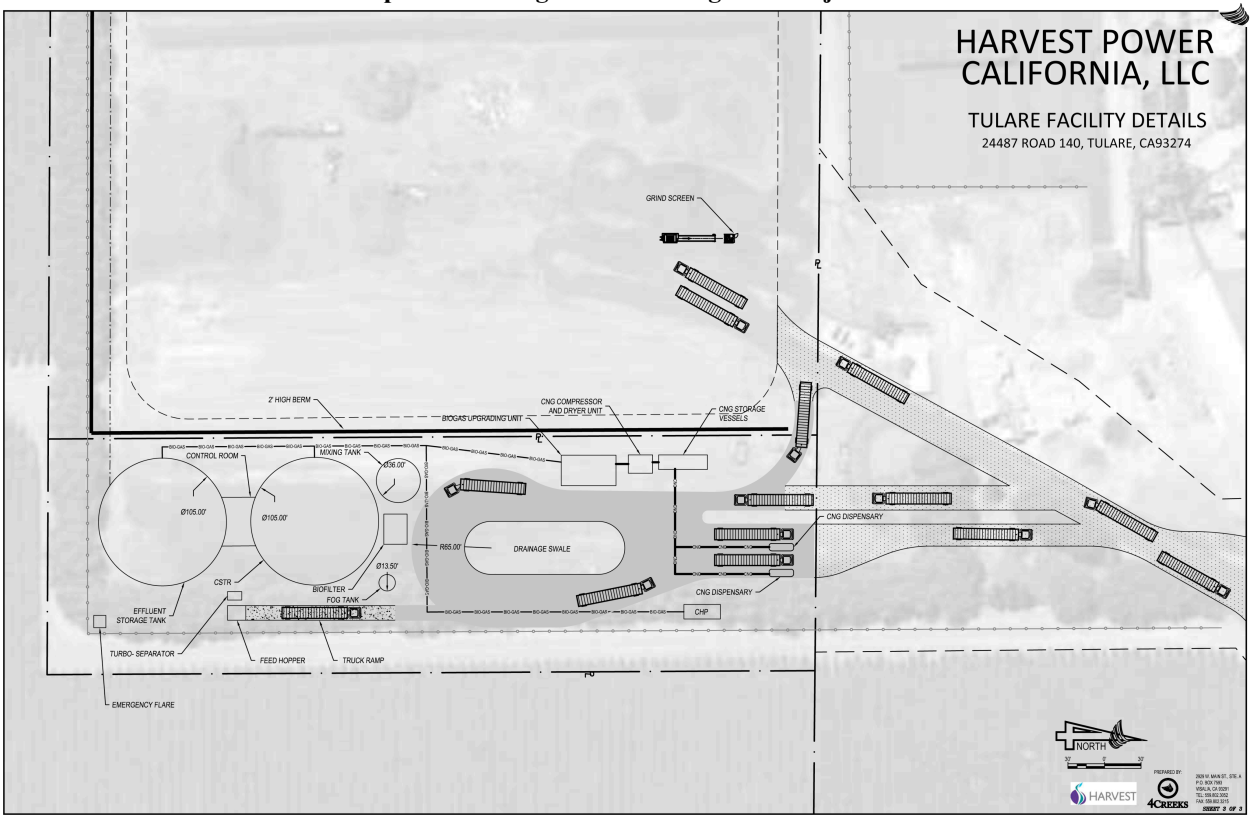


Figure 3.9-4
Proposed Drainage Swale for Digester Project



Ground Water Quality

Water usage on the site will consist of using water down all travel ways and compost piles during the dry months and will create little to no runoff. The runoff that does not evaporate will be allowed to percolate through the ground surface. All internal runoff created by the facility operations will therefore be contained on site and drainage patterns on the site will not be significantly altered during development. A retention pond will be designed to collect runoff water from the proposed Project site and is expected per the attached drainage design proposed by 4 Creeks Engineers, to have the capacity to store the 100 year / 24 hour event. (See **Figure 3.9-3**). The existing berms and slopes on the existing compositing facility site will also be modified to ensure that proposed Project water runoff is contained on site. Moreover, the State Water Resources Control Board (SWRCB) requires any new construction project over an acre to complete a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP involves site planning and scheduling, limiting disturbed soil areas, and determining best management practices to minimize the risk of pollution and sediments being discharged from construction sites. Implementation of the SWPPP will minimize the potential for the proposed Project to substantially alter the existing drainage pattern in a manner that will result in substantial erosion or siltation onsite or offsite. Additionally, there will be no discharge to any surface or groundwater source.

General Tentative Composting Order No. Dwq-2012-Xxxx

Upon the Composting Order becoming final, Harvest Power will have to update their facilities to comply with the General Composting Order. They will also have to make all changes to the detention facilities to make sure that the water in the facility is being kept to RWQCB standards. In addition, they will have to comply with all compost storage requirements and monitoring requirements of the RWQCB.

With mitigation, *less than significant* project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis: ***Less than Significant Impact with Mitigation***

The geographic area of this cumulative analysis is the Tulare Lake Basin. This cumulative analysis is based on information provided in the Water Quality Control Plan for the Tulare Lake Basin and the requirements of Tulare County Environmental Health.

The proposed Project (as mitigated), will be required to comply with the all requirements of the Central Valley Water Board and Tulare County Health Services Division (TCEHSD). In addition, the drainage and pond plans will be reviewed and approved by the Central Valley Regional Water Quality Control Board and may require a Report of Waste Discharge (RWD) National Pollution Discharge and Elimination System (NPDES) permit, if one is required. The on site drainage will also be reviewed by Tulare County Environmental Health and the Public Works Department to verify that the site does in fact contain the 100 year / 24 hour event per Regional Water Quality Control Board standards. Moreover, the concrete under the Truck Ramp, Feed Hopper, and Turbo Separator CTSR tank/ Control Room / Effluent Storage Area, will be contained through lining the concrete under these facilities and water proofing their surfaces Therefore, the proposed Project will not create any significant cumulative impacts related to this checklist item.

Mitigation Measures:

3.9-1 The applicant shall receive all required permits from the RWQCB and the State Water Board prior to the issuance of building permits.

3.9-2 The proposed Project shall comply with any new regulations brought by the RWQCB and/or the State Water Board. This includes, but is not limited to, regulations pertaining to the General Tentative Composting Order No. Dwq-2012-Xxxx for composting facilities.

3.9-3 The applicant shall prepare and submit a SWPPP to Tulare County prior to the issuance of a building permit. This SWPPP shall be implemented and retain on site as part of business operations.

3.9-4 That any tanks or basin lining be designed to RWQCB standards and approved by TCEHSD prior to the issuance of a building permit.

3.9-5 That any piping be reviewed and approved by the TCEHSD to verify that the contents will not pollute the groundwater.

3.9-6 The drainage system, including the berms, and the retention pond and drainage swale facilities shall be designed, and the plans stamped by a registered Professional Engineer, of whom must be registered and/or licensed in California, and have professional knowledge and experience in the field of on site drainage and detention facility design. The specifications and engineering data for the drainage system and detention facilities shall be submitted to the Public Works Department and TCEHSD for review and approval prior to the issuance of a building permit.

Conclusion: ***Less than Significant Impact with Mitigation***

As noted above, no significant impacts related to this checklist item will occur.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells will drop to a level which will not support existing land uses or planned uses for which permits have been granted)?

Project Impact Analysis: ***Less than Significant Impact***

As noted in the water usage analysis, agricultural activities typically use 3 feet of water per year. The proposed Project will use 14,985,000 gallons of water per year. This amounts to 46 acre feet of water per year. Crops in the area use 3 feet of water per year, while the Project's water usage amounts to 1.3 feet per acre per year. [40] As the proposed water use will be lower than the water use of a permitted agricultural activity, less than significant project specific impacts will result.

Cumulative Impact Analysis: ***Less than Significant Impact***

The geographic area of this cumulative analysis is the Tulare Lake Basin. This cumulative analysis is based on information provided in the Water Quality Control Plan for the Tulare Lake Basin and the requirements of Tulare County Environmental Health.

As noted in the California Water Plan 2009, Regional Report 3, Tulare Lake, it is estimated the future water demand will be reduced by 550,000 acre-feet in future conditions. The proposed expansion will create a need for a small increase in the amount of water usage; however, this usage is less than the water usage of a typical agricultural activity. As noted in the 2009 Water plan, part of the water demand reduction if the conversion of agricultural

[40] Ground Water Extraction Letter, John Minney

uses to more urban uses. The proposed Project is one of many projects that is part of an overall reduction of water use by agricultural activities. Therefore, even with a slightly more intensive use, water supply will not be impacted on a cumulative level.

Mitigation Measures:

None Required.

Conclusion: ***Less than Significant Impact***

As noted above, less than significant project specific and cumulative impacts related to this checklist item will occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which will result in substantial erosion or siltation on- or off-site?

Project Impact Analysis: ***No Impact***

The project site is not located along a natural water feature such as a lake, river or stream.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. Alteration of a stream or river will be subject to the regulations of the U.S. Army Corps of Engineers and the California Department of Fish and Game.

The proposed Project will not affect the drainage pattern of any off-site parcels, no cumulative impacts related to this checklist item will occur.

Mitigation Measures:

None Required.

Conclusion: ***No Impact***

As noted above, no project specific or cumulative impacts related to this checklist item will occur.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which will result in flooding on- or off-site?

Project Impact Analysis: ***No Impact***

The project site is not located along a natural water feature such as a lake, river or stream. There is an adjacent irrigation ditch adjacent to the site, however, the changes to the drainage pattern will not impact the irrigation ditch. As such, no project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. Alteration of a stream or river will be subject to the regulations of the U.S. Army Corps of Engineers and the California Department of Fish and Game.

The proposed Project will not affect the drainage pattern of any off-site parcels, no cumulative impacts related to this checklist item will occur.

Mitigation Measures:

None Required.

Conclusion: ***No Impact***

As noted above, no project specific or cumulative impacts related to this checklist item will occur.

e) Create or contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Project Impact Analysis: ***No Impact***

The extent of erosion on a site will typically vary depending non-slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions. The proposed Project site is currently receives an average of nine inches of rain/year. The site will continue to have a flat topography after proposed Project construction, but continue to have 2 foot berms around the edges. As such, construction activities will minimally disturb the ground surface. Drainage patterns will be minimally changed as a result of proposed Project. All internal runoff created by the facility operations and precipitation up to a 100-year, 24 hour storm is currently, and will continue to be, contained on site, as discussed, above. A SWPPP will be in place during construction, as also described above. There are no rivers or streams within a

five (5) radius of the site. As such, no project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the requirements of the Central Valley Regional Water Quality Control Board.

As noted in the SWPPP, storm water will be retained on site. As such, no cumulative impacts related to this checklist item will occur.

Mitigation Measures:

None Required.

Conclusion: ***No Impact***

As noted above, no project specific or cumulative impacts related to this checklist item will occur.

f) Otherwise substantially degrade water quality?

Project Impact Analysis: ***No Impact***

The proposed Project does not include elements that could degrade water quality beyond what was discussed in 3.9 a). No project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the requirements of the Central Valley Regional Water Quality Control Board.

As noted above, the proposed Project does not include elements that could degrade water quality beyond what was discussed in 3.9 a). No cumulative impacts related to this checklist item will occur.

Mitigation Measures:

None Required.

Conclusion: ***No Impact***

As noted above, no project specific or cumulative impacts related to this checklist item will occur.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Project Impact Analysis: ***No Impact***

The proposed Project does not include the construction of any housing units. No project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The proposed Project does not include any housing units. Therefore, no cumulative impacts related to this checklist item will occur.

Mitigation Measures:

None Required.

Conclusion: ***No Impact***

As noted above, no project specific or cumulative impacts related to this checklist item will occur.

h) Place within a 100-year flood hazard area structures which will impede or redirect flood flows?

Project Impact Analysis: ***No Impact***

According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) Flood Insurance Rate Map (FIRM) for Community Number 06107C0970E dated June 16, 2009; the Project site is located in Zone A. Zone A areas are not in the 100 year flood hazard area with undefined baselines. Construction within Zone A requires no specific flood mitigation measures. The construction of housing is not a part of the proposed Project. There will be no impact with regard to flood related events.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The proposed Project will not have off site impacts related to flooding. In addition, the proposed Project will not induce additional flooding hazards. No cumulative impacts related to this checklist item will occur.

Mitigation Measures:

None Required.

Conclusion: ***No Impact***

As noted above, no project specific or cumulative impacts related to this checklist item will occur.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Project Impact Analysis: ***No Impact***

"Two major dams could cause substantial flooding in Tulare County in the event of a failure: Terminus Dam and Success Dam. In addition, there are many smaller dams throughout the county that will cause localized flooding in the event of their failing."[41]

The proposed Project site is inside the inundation areas for Terminus Dam, which is approximately 18 miles from the site. However the proposed Project does not include any residential structures and therefore will not be placing people or structures to the risk of flooding from potential failure of a levee or dam. In addition, the proposed Project does not involve significant water storage or changing the alignment of an established watercourse. No project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

As noted above, the proposed Project is not located near a major levee or dam. The proposed Project will not have any impacts related to this checklist item on other off-site parcels. Therefore, no cumulative impacts related to this checklist item will occur.

Mitigation Measures:

None Required.

[41] General Plan Background Report, page 8-17

Conclusion: ***No Impact***

As noted above, no project specific or cumulative impacts related to this checklist item will occur.

j) Inundation by seiche, tsunami, or mudflow?

Project Impact Analysis: ***No Impact***

The nearest large body of water is Kaweah Lake, which is located approximately 19 miles northeast of the proposed Project site. Due to the distance between the reservoir and the proposed Project site, there will be no potential for seiche or tsunami to occur. There will be no impact.

The project is site is relatively flat and is not located near a large body of water, the coast or hillsides. As such, the proposed Project is not subject to inundation by seiche, tsunami, or mudflow. No project specific impacts related to this checklist item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

As noted above, the proposed Project is not located near a large body of water, the coast or hillsides. The proposed Project will not have any impacts related to this checklist item on other off-site parcels. No Cumulative Impacts related to this checklist item will occur.

Mitigation Measures:

None Required.

Conclusion: ***No Impact***

As noted above, no project specific or cumulative impacts related to this checklist item will occur.

REFERENCES

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http://ceres.ca.gov/wetlands/permitting/Porter_summary.html

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http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.shtml

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California Department of Water Resources website, http://www.water.ca.gov/about/mission.cfm

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